THE INSTITUTE OF PHYSICS

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BULLETIN

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DECEMBER 1952

X-RAY ANALYSIS GROUP

Celebration of the Fortieth Anniversary of the Discovery of X-Ray Diffraction

A group taken at the Royal Institution. From left to right: Mrs. D. Hodgkin, Sir Lawrence Bragg, Professor von Laue, Dr. W. H. Taylor (Chairman of the X-ray Analysis Group), Dr. C. Sykes (President of the Institute), Mr. H. P. Rooksby and Dr. J. Thewlis.

The Autumn Conference of the X-ray Analysis Group of the Institute was devoted to celebrations of the fortieth anniversary of the discovery of X-ray diffraction by von Laue. On October 24th and 25th scientific meetings were held at the Royal Institution, London, in the laboratories of which Sir William Bragg undertook and directed so much crystallographic research. At the first session Sir Lawrence Bragg and Professor J. D. Bernal gave addresses; Professor von Laue, who had come from Germany as the Institute's guest of honour for the celebrations, also spoke briefly. The following day lectures were given by Mrs. D. Hodgkin, Professor G. V. Raynor and Sir Lawrence Bragg. A summary of the lectures and discussions has been prepared by Dr. H. Lipson and will be published in the *British Journal of Applied Physics* early in 1953.

On the evening of October 24th, an Anniversary Dinner was held at the Criterion Restaurant, Piccadilly Circus, London; about 140 people attended. The principal guests were Professor von Laue and Dr. Bijvoet, both of whom replied to toasts. Other speakers were Sir Charles Darwin, Sir Lawrence Bragg, Dr. Charles Sykes and Professor J. D. Bernal. Dr. W. H. Taylor was in the chair. A photograph taken at the dinner is reproduced on page 78.

The Anniversary Dinner.

NOTICES TO MEMBERS

Changes in the Bulletin

Commencing with the January 1953 issue, changes will be made in the arrangements for printing the *Bulletin*; at the same time a slight modification of the format will be made and the type will be changed from "Times" to "Baskerville." The net cost to The Institute of printing and publishing the *Bulletin* has always been small and it is hoped that it will be possible to increase the average number of pages without appreciably increasing the net cost. More space should be available and contributions from members, in the form of short articles (of about 1000 words) or correspondence, are invited. They should be sent to the Deputy Secretary, the editor of the *Bulletin*.

Bulletin index

Many members file their copies of the *Bulletin* as a useful record of professional news and notices; for their convenience an index of items appearing in the 1952 issues is supplied with this number.

Symposium on nuclear reactor instrumentation

A symposium on nuclear reactor instrumentation has been arranged by The Institution of Electrical Engineers and will be held on 8 January, 1953, commencing at 4.30 p.m. An invitation to attend has been extended to all members of The Institute of Physics. Tickets are not required. The opening lecture will be by Sir John Cockcroft on "Nuclear Reactors and Applications." After tea (5.30–6 p.m.) the following three papers will be read: "The Control of a Thermal Neutron Reactor" by R. V. Moore, "Automatic Control Characteristics of Thermal Neutron Reactors" by J. H. Bowen, and "Neutron Detectors for Reactor Instrumentation" by T. A. J. Jaques, H. A. Ballinger and F. Wade.

Copies of the three papers and a synopsis of Sir John Cockcroft's lecture will be available before the meeting (probably about the beginning of January) and application should be made to the Secretary, The Institution of Electrical Engineers, Savoy Place, London, W.C.2.

Protection from radiation

In view of the growing use of X-rays and radiation from radioactive isotopes in industry and elsewhere, the Board of the Institute again calls attention to the need to take simple precautions against risks to health arising from the absorption of radiation. A short bibliography of information on the subject is given below. Further information can be obtained from any of the following:

The Director, National Physical Laboratory, Teddington, Middlesex.

The Hospital Physicist at the nearest hospital.

Regarding industrial uses

The Chief Inspector of Factories, 8 St. James's Square, London, S.W.1.

Regarding the use of radioactive isotopes

The Director, Atomic Energy Research Establishment, Harwell, Didcot, Berkshire.

BIBLIOGRAPHY

1. *Memorandum on gamma-ray sources for radiography* (obtainable from The Institute of Physics, 47 Belgrave Square, London, S.W.1. Price 3s. 6d. net).
2. *Handbook of Industrial Radiology* (published for The Institute of Physics by Edward Arnold and Co., 41 Maddox Street, London, W.1. Price 21s.)

3. *X-ray Protection Design*, by H. O. Wycoff and L. S. Taylor, being Handbook 50 of the National Bureau of Standards (published by the Government Printing Office, Washington 25, D.C., U.S.A. Price 15 cents).
4. *Factories (Luminising) Special Regulations* 1947, No. 865 (published by H.M. Stationery Office. Price 2d.)
5. *Recommendations of the International Commission on Radiological Protection*, 1950 (copies obtainable (gratis) from The Faculty of Radiologists, 45 Lincoln's Inn Fields, London, W.C.2.)
6. *Introductory Manual on the Control of Health Hazards from Radioactive Materials, Issue No.* 2, 1949 (copies obtainable (gratis) from the Medical Research Council, 38 Old Queen Street, London, S.W.1.)
7. *Recommendations of the British X-ray and Radium Protection Committee*, 7th Revised Report, October 1948 (obtainable from the Director, National Physical Laboratory, Teddington, Middlesex.)

Transfer to Graduateship

Student members who have obtained degrees this year are reminded of the requirement of By-Law 33 which states that

> "A Student shall cease to be a Student at the end of the year in which he becomes eligible for transfer to the grade of Graduate . . . unless the Board upon the receipt of a written application from him allows him to remain a Student."

To be eligible for transfer to Graduateship a candidate must (i) have reached the age of 21 years, (ii) have received a general education approved by the Board, (iii) have obtained a degree or diploma recognized by the Board *or* have passed the Institute's Graduateship Examination, and (iv) be at the time of his application engaged in research, teaching or industrial or other work or advanced study which, in the opinion of the Board, demands sufficient knowledge of physics.

Forms of application for transfer to Graduateship may be obtained from the Secretary.

Salary statistics

The Institute has conducted two salary enquiries among Members; they related to salaries received on 1st January, 1948, and 1st January, 1951. The reports on these enquiries aroused considerable interest among Members and have been widely welcomed by employers and by other professional bodies. Requests for information on the level of salary commonly paid to physicists of different length of experience in various types of post are often received. The data collected in 1951 are, however, considered to be an unreliable guide to present salaries and the Board has authorized the collection of further information from Members during 1953, probably in the Spring. The enquiry will be conducted along the same lines as the last one and the Board hopes that the same excellent response will be made by Members at all levels of seniority.

Education report

Since the publication of *The Scientific Education of Physicists*, copies of which are still available to members free on request, the Education Committee has been preparing a further report. This will deal with some present problems arising in the education of physicists; among the topics which have been discussed are the adequacy of knowledge of physics possessed by entrants to university honours courses in the subject, the shortage of physics teachers of the right quality and the training in research provided for students for the Ph.D. degree.

The new report will be submitted for the approval of the Board at its January meeting and will probably be printed in the February issue of the *Bulletin*.

NEWS OF MEMBERS

Fellows

C. A. Meek has been awarded the O.B.E. and is now Senior Principal Scientific Officer in the Explosive Research and Development Department of the Ministry of Supply at Waltham Abbey, Essex.

J. M. Lenihan—Physicist to the Western Regional Hospital Board, Scotland.

M. Stephenson—Chief Exploitation Engineer for the Shell Group in Venezuela.

Associates

J. F. W. Bell—Assistant Professor, Department of Physics, Royal Naval College, Greenwich.

M. M. Bluhm—Medical Research Council Unit, Cavendish Laboratory, Cambridge.

H. Buckle—Textile Laboratory, British Enka Ltd., Aintree, Liverpool.

A. H. Lee—Senior Examiner, Patent Office, London.

Graduates

A. G. Hester—Research Engineer, Electrical and Musical Industries Research Laboratories Ltd., Hayes, Middlesex.

B. C. F. Hooper—Headmaster, Whitewell Bottom C.S.M. School, Rossendale.

J. G. Padbury—Assistant Technical Officer, Imperial Chemical Industries Ltd., Plastics Division, Welwyn Garden City, Herts.

M. G. Rossmann—Assistant Lecturer, Royal Technical College, Glasgow.

APPOINTMENTS VACANT

The inclusion of particulars of a vacancy must not be taken to imply that the Institute necessarily approves of the terms offered or that might be offered. Candidates should satisfy themselves that these are satisfactory, and they may always refer to the Institute for advice.

SCIENTISTS

Commonwealth of Australia, Department of National Development, Bureau of Mineral Resources, Geology and Geophysics, Geophysical Section Melbourne, have a vacancy for a **Senior Geophysicist** whose duties will be principally to edit and attend to publication of geophysical reports, maps and plans. Also to supervise the work of the drafting and library staffs.

Candidates must have a university degree, preferably with honours, or its equivalent, with a major in one or more of the following subjects: Geophysics, Physics, Geology or Mathematics, the course having necessarily included Physics and Mathematics to at least second year standard and Geology to at least first year standard. Considerable experience in editing of scientific papers and reports desirable.

The successful applicant will be eligible for permanent appoint-

ment to the Public Service and to Superannuation benefits. Salary will be £1,328 to £1,418 per annum.

First class boat fares (if first class berths available) of the appointee and dependants (wife and dependent children) will be paid by the Commonwealth subject to the employee entering into a bond to remain in the employment of the Commonwealth for a period of not less than three years.

The salaries shown are actual (including cost of living, etc.) and are in Australian currency.

Applications should be forwarded to the Deputy High Commissioner, Australia House, The Strand, London, W.C.2, marked for attention of the "Senior Representative, Division of Industrial Development," not later than 20th December, 1952.

Imperial Chemical Industries Limited, Dyestuffs Division, has a vacancy for a **spectroscopist** for service and research work on the absorption spectroscopy and colorimetry of dyes and coloured materials. Applicants should have a 1st or 2nd Class Honours degree in physics or chemistry and a good knowledge of classical physics, with an interest in the electronic techniques encountered in spectrophotometers. Salary in accordance with training and experience. Applications in writing to Staff Dept., Hexagon House, Blackley, Manchester, 9. Ref. Spectroscopist.

Ministry of Supply, Telecommunications Research Establishment, Malvern, Worcs., require **Scientific Officer** with 1st or 2nd class honours degree in physics, or equivalent, and an interest in properties of semi-conductors for research into methods of sensitization of photoconductive cells, particularly lead selenide. Good practical ability required, with some knowledge of vacuum technique and elementary glass working. Salary within range £417–£675 (women somewhat less). Post unestablished. F.S.S.U. benefits may be available. Application forms from M.L.N.S., Technical and Scientific Register (K), 26 King Street, London, S.W.1, quoting A 298/52/A. Closing date 24 January, 1953.

University of Sydney, School of Physics—**Lecturers, Senior Lecturers, Readers in Physics.** Professor H. Messel has recently been appointed Professor of Physics and Head of the School of Physics. Staff at present consists of one Reader, three Senior Lecturers, one Lecturer and nine full-time temporary Lecturers.

The Senate has decided to make five additional appointments to the teaching staff and to consider making permanent appointments in replacement or conversion of some of the temporary positions.

Applications are invited for Lectureships or Senior Lectureships in Physics. Should applicants be of sufficient standing, consideration will be given to making not more than two appointments at the grade of Reader.

In addition to the normal teaching duties, the School will be concerned with research in a number of fields of Physics. Particular attention will be paid to Experimental High Energy nuclear research using cosmic rays and to modern theoretical physics. The experimental work will be carried out using photographic plate emulsions and balloons, Geiger–Muller counters, cloud chambers and ionization chambers.

The salaries are in the range of: Readers £1500 (Australian); Senior Lecturers £1050–£1300 (Australian); Lecturers £650–£1000 (Australian) per annum, plus cost of living adjustment (at present £236 males and £179 females per annum) with annual increments of £50 and subject to deductions under the State Superannuation Act. The commencing salary will be fixed according to qualifications and experience.

Further particulars and information as to the method of application should be obtained from the Secretary, Association of Universities of the British Commonwealth, 5 Gordon Square, London, W.C.1.

The closing date for the receipt of applications in London and Australia is 12 January, 1953.

Graduate required for process control and development work. Minimum qualification, Pass Degree standard in chemistry and physics. Previous research experience, although not essential, would be an advantage. Salary in accordance with qualifications and experience. Apply, giving full details to the Managing Director, Tyneside Safety Glass Co. Ltd., Team Valley Trading Estate, Gateshead on Tyne.

The Distillers Co. Ltd., Central Engineering Department, require a **Physicist,** aged 35 onwards, to prepare instrumentation specifications for new plant and general supervision of installation of equipment. Applicants should have previous experience of instrumentation in chemical plant. Duties will also involve inspection and advice on existing equipment in factory. Laboratory facilities available. Salary will depend on qualifications and experience. Apply: Staff Manager, Distillers Co. Ltd., 21 St. James's Square, London, S.W.1.

The British Boot, Shoe and Allied Trades Research Association require a young **Physicist** for work on (*a*) footwear production and wear problems; (*b*) shoe materials and other products used in the industry. Duties: laboratory testing (including work on new methods), also practical research and development on materials and processes. Recent graduates considered, but some industrial laboratory experience in a related field (e.g. leather, rubber, plastics or adhesives) will justify a higher starting salary up to £700 p.a. Salary reviewed annually. F.S.S.U. Applications to Director, B.B.S.A.T.R.A., Satra House, Rockingham Road, Kettering, Northants.

National Coal Board invite applications for the undermentioned superannuable appointments at the Central Research Establishment, Stoke Orchard, near Cheltenham, from **Physicists** and **Chemists** with good honours degrees or equivalent for laboratory investigations on the surface characteristics and associated properties of coal and allied materials as applied to briquetting.

Scientist Grade II to take charge of the laboratory investigations. Salary scale £645 × £30 to £1095 per annum, male, according to qualifications and experience (Ref. No TT/560).

Scientist Grade III salary £445 × £25 to £845 per annum according to qualifications and experience. (Ref. No. TT/561.)

Applications will also be considered from candidates trained to degree standard for appointment as **Scientific Technical Officer Grade II** (salary scale £485 × £20 to £705 per annum, male, and £390 × £16 to £566 per annum, female). (Ref. No. TT/562.)

Write, giving full particulars (in chronological order) of age, education, qualifications and experience (with dates) to National Coal Board, Establishments (Personnel), Hobart House, Grosvenor Place, London, S.W.1, marking envelope with the relevant TT reference number quoted above. Closing date 29 December, 1952. Original testimonials should NOT be forwarded.

TECHNICIANS

The British Boot, Shoe and Allied Trades Research Association require **physics laboratory technician** (non-graduate) for varied experimental and testing work. Male or female. Some experience, particularly of microscope techniques, an advantage. Permanent and progressive post qualifying for pension scheme. Applications, which should indicate the starting salary required, to Director, Satra House, Kettering.

Glass Blower to take part in research work in connection with thermionic valves in the Physics Department of the **College of Technology, Birmingham.** Experience in construction of valves with glass to metal seals would be an advantage. Applicants should have initiative and should be willing and able to carry out some constructional work on valves in addition to glass work. The successful candidate will be expected to give some instruction in glass blowing to students. Salary will be in accordance with the scale for Senior Laboratory Technicians £440–£495. Applications should be sent to the Head of the Department of Physics and Mathematics, College of Technology, Birmingham 1.

APPOINTMENT WANTED

M.A.(Cambs.), M.Sc.(Lond.), F.Inst.P., recently retired Service Education Officer with high level administrative experience, formerly teacher and university lecturer, aged 60 but fit and active, seeks light or part-time work, preferably in connection with the teaching or practice of physics. Box No. A.V.31, The Institute of Physics, 47 Belgrave Square, London, S.W.1.

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